

**V Monitoring
City of Malibu
FY 2011-2012**

V. Briefly describe any storm water monitoring activities that are not required by Order No. 01-182 that your municipality conducted, participated in, or received funding to conduct in the past fiscal year. These activities should correspond with the dollar amount you listed in Table 2.

The monitoring activities not required by this order that the City of Malibu conducted or participated in are as follows:

Malibu Creek Bacteria TMDL Coordinated Monitoring

The Malibu Creek Bacteria TMDL required a coordinated monitoring plan. The plan was developed through the WMC and the Malibu Creek Watershed Council Monitoring Technical Advisory Committee. It was submitted to the Regional Board in May 2006 and approved in Fall 2007. A contract was executed for this monitoring with the City of Agoura Hills as the project manager.

Term of Monitoring: Monitoring began March 2008 and is on-going.

Cost to City of Malibu in FY 2010-2011: \$2,029

Area of Special Biological Significance (ASBS)

The City is adjacent to an ASBS and will be conducting programs and monitoring in conjunction with the special requirements for this area to meet the State adopted Special Protections. In the meantime, in response to the need for additional information, the State Water Resources Control Board (SWRCB) worked with ASBS dischargers in the 2008-2009 wet season to collaboratively conduct an ASBS regional monitoring program in Southern California in recognition that the studies would provide better scientific information to the SWRCB for regulation of the ASBS and in drafting the Special Protections for the pending Exceptions to discharges to the ASBS. The City participated in this regional monitoring as part of Southern California Coastal Water Research Project's (SCCWRP) Bight 08 ASBS group. The goal of this monitoring program is to answer three questions:

- 1) What is the range of natural water quality at reference locations?
- 2) How does water quality along ASBS coastline compare to the natural water quality at reference locations?
- 3) How does the extent of natural quality compare among ASBS with or without discharges?

This monitoring program included 3 wet weather monitoring events for fecal indicator bacteria, toxicity, and chemical analyses in the wave wash at 1) a reference site at the mouth of a watershed relatively unaffected by human activity (>90% undeveloped watershed with no

303 (d) listings); and 2) a site where there is a MS4 pipe discharge when raining. This sampling took place in the wet season of 2008-2009. Water quality monitoring began November 2008 and ended in February 2009 and was reported on in previous annual reports. It was anticipated that another wet season of water quality results would be needed. Therefore, participating agencies (including the City of Malibu) have begun preparing for the upcoming wet season to meet the Special Protections requirements and have been meeting as part of early planning for Bight 20013.

The City also contributed to the cost of biological assessments in rocky intertidal and rocky subtidal habitats as part of the regional monitoring program. Biological assessments for rocky intertidal habitat were completed under a contract that SCCWRP managed as part of the Bight '08 program at two sites in Malibu for about a week each during low tide in fall of 2009, and at one site in Malibu in late winter of 2010. Assessments also were conducted in December of 2008 for rocky subtidal habitat. More than 60 subtidal sites were sampled throughout southern California with at least one site in every ASBS including ASBS 24 in the City of Malibu. This regional program was cost shared by participating agencies. SCCWRP published the report on the water quality monitoring results in January 2011 and a report on the rocky reefs biological assessments in January 2012.

While it is not field monitoring, the City also contributed to the cost of an in-depth scientific analysis of existing biological data and information submitted to the SWRCB for ASBS Exception Applications. This study was conducted by Dr. Pete Raimondi of University of California at Santa Cruz (UCSC), and the results will be used towards recommendations on biological assessments for the ASBS Exception Special Protections. A six month time extension was granted to UCSC for assessment of ASBS biological data through March 2010.

Term of Monitoring:

The analysis of biological data and information from ASBS exception applications was completed in spring 2009. However, the first assessment report for this work, "Appendix 7", was provided to participating agencies in August of 2009. The status of the second report is not known at this time.

Biological Assessments took place for several days in November through early December of 2009, and late February through early March 2010.

Cost to City of Malibu in FY 2011-2012: \$0. All contracts were paid in a lump sum in FY 2008-2009.

Civic Center Stormwater Treatment Facility

Water treated by the City's Stormwater Treatment Facility comes from three remote stormwater pumping facilities located on Civic Center Way, Cross Creek Road, and at the Malibu Lagoon. Each remote pumping station has its own screening device (brand name: Aquashield) that screens out debris from the stormwater before being pumped and processed at the Stormwater Treatment Facility.

As the storm water arrives at the treatment facility, the water is processed through a media-type filter, disinfected using ozonation, and then filtered through a bed of granulated activated carbon media.

The monitoring program consists of taking weekly water samples from the treatment plant's inlet pipe (where collected runoff enters the facility) and effluent pipe (where treated water exits the facility before discharge to the MS4), and recording the flow of water processed through the plant, also on a weekly basis. The samples are taken and tested by a State certified water testing laboratory, Aquatic Bioassay & Consulting Laboratories, Inc., and tested for Total Coliforms, Fecal Coli, E. Coli, and Enterococcus bacteria. Test results are compared against EPA REC 1 Standards.

The operation and maintenance services of the Stormwater Treatment Plant are contracted out to several vendors. Ozone Water Co. is responsible for the daily operation and maintenance and emergency response for the treatment plant facility and Advanced Sewer Technology is responsible for cleaning out the debris screening devices and piping at each remote pumping station on a quarterly basis or more often as needed.

Term of Monitoring: Fecal Indicator Bacteria monitoring began September 2008 and is on-going weekly.

Cost to City of Malibu in FY 2011-2012: \$15,420

Paradise Cove Stormwater Treatment Facility

The City entered into an agreement (Agreement Number 06-298-550-0) with the State Water Resources Control Board (SWRCB) in July of 2007 to construct a stormwater and urban runoff treatment facility. The City later entered into an agreement in December of 2008 for State Revolving Fund Project No. C-06-6969-110 Agreement No. 08-354-550. Funding for this project was provided in part by the American Recovery and Reinvestment Act of 2009 and the Clean Water State Revolving Fund, through an agreement with the SWRCB.

The facility is located along the channelized portion of Ramirez Canyon Creek on private property that discharges at the Pacific Ocean at Paradise Cove adjacent to a pier. The purpose of the project is to reduce fecal indicator bacteria levels and improve the water quality at the recreational beach of Paradise Cove, to protect public health and meet State Total Maximum Daily Loads (TMDL). The scope of work involved the installation of a filtration and disinfection system to treat water from the channelized creek at approximately 3,600 gallons per minute (gpm) using a settling chamber to remove sediment, then treat it at approximately 900 gpm using multi-media filtration to remove finer particles, and ultraviolet light to sterilize potentially infectious organisms. The treated water is discharged to the beach adjacent to but separate from the opening of the creek channel. The City completed construction of the facility at the outlet of Ramirez Creek in June 2010.

In accordance with the previously mentioned agreements, the City is implementing a monitoring program which includes collection of samples from Ramirez Creek and Paradise

Cove beach for fecal indicator bacteria water quality analysis, and field observations on a weekly basis at five designated sites. All lab work for the project was required to be compliant and comparable with the State Water Resources Control Board's Surface Water Ambient Monitoring Program (SWAMP) Quality Assurance Project Plan. In addition, the City installed a flow meter in the creek channel in late February 2011 to conduct a flow study of the creek and to assess the effectiveness of the facility. The flow meter was removed in spring of 2012. The final project report was submitted to the State Water Resources Control Board in fall of 2011 in accordance with the grant agreement.

Term of Monitoring: Fecal Indicator Bacteria monitoring began August 2010 and is on-going weekly.

Cost to City of Malibu in FY 2011-2012: \$30,118

North Santa Monica Bay Bacteria Source Identification Study

The Office of Los Angeles County Supervisor Zev Yaroslavsky (SD3) funded a study by SCCWRP to investigate and potentially identify the source(s) of bacteria in Ramirez Canyon and Escondido Canyon creeks, which may be present at the outlets of these creeks. A desired end result of this study was to develop a feasible methodology for tracking sources of bacterial pollution that can be applied to other watersheds. An interim report was produced; however the methodology was not developed. More current scientific studies are working on this issue in general.

Term of Monitoring: Sampling did not resume this year as the County has not continued the project at this time.

Cost to City of Malibu: \$0. Malibu staff time was contributed as a resources match. The County of Los Angeles committed \$500,000 to this project. Please contact the County for more information on the cost of this program.

United States Geological Survey (USGS) Water Quality Source Assessment

The City contracted with USGS to perform a cooperative water-resources study to identify the source(s) of fecal indicator bacteria in the Malibu Lagoon and ocean beaches from the Malibu Colony to the Pier including Surfrider Beach using advanced research and analysis technologies. Dry weather studies were conducted in July 2009 and additional sampling was conducted in October 2009; after completing analysis of the results, a full study proposal was provided to the City in January 2010. A wet weather component was conducted in April 2010. In July 2010, a new agreement was executed with USGS for analysis and reports for sample sites in the Malibu Civic Center area, Malibu Creek, Malibu Lagoon, Surfrider Beach and Malibu Colony. A draft of the scientific journal paper was available to City staff for review in October 2010 and publication is pending.

Term of Monitoring: Samples were taken July 2009 through April 2010. The final peer reviewed manuscript was officially published on August 22, 2012 (outside of this reporting year).

Total Contract Cost (may include payments outside of the current reporting year): \$739,725

Cost to City of Malibu: \$122,095 in FY 2011-2012

Coordinated Shoreline Monitoring Program for Santa Monica Bay Beaches Bacteria TMDL Compliance Monitoring

The City participates in a cost sharing arrangement with the other responsible agencies for this compliance monitoring. This TMDL was incorporated into *Order 01-182*, but was not part of the Stormwater Monitoring and Reporting Program that is the subject of this question. Additionally, *Order 01-182* was again amended, thus removing the language which incorporated the TMDL. Therefore, it is unclear if this monitoring falls within the purview of this question. The cost of the TMDL Compliance Monitoring has been included here, in the interest of compiling the City's total annual additional monitoring costs beyond the Monitoring and Reporting Program of the NPDES permit *Order 01-182*. The current Memorandum of Agreement between the City of Malibu and the City of Los Angeles was extended to end on June 30, 2013.

Cost to City of Malibu: \$20,158 in FY 2011-2012

Total Additional Monitoring Costs FY 2011-2012: \$189,820